

The Effect of Supporting Managers by Online Coaching on the Managerial Coaching

Behaviour as Perceived by the Subordinates:

The Mediating Role of the Manager's Implicit Person Theory

Alissa L. van Zijl

Tilburg University

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Supervisor: Dr. M. van Woerkom

Second reader: Prof. dr. R.F. Poell

Tilburg University, Faculty of Social and Behaviour Science

Abstract

This study explores whether providing support for managers through an online coaching intervention will have a direct, positive effect on facilitating, guiding and inspiring managerial coaching behaviour (MCB) as perceived by subordinates. It is hypothesized that a manager's beliefs regarding an individual's ability to change personal traits, also known as their implicit person theory (IPT) (Heslin, Vandewalle, & Latham, 2006), can mediate the effect of the online coaching intervention on MCB. A manager's tendency to believe that individuals are capable of changing or developing attributes is known as the incremental person theory. The belief that individual's attributes are fixed with no possibility of change is known as the entity person theory. A change in a manager's IPT is expected to occur as a result of the online coaching intervention. It is hypothesized that as a manager's belief in the incremental person theory increases, the more the manager will provide guiding, facilitating and inspiring MCB for his or her subordinates.

This study is a secondary data analysis of a quasi-experimental study. During the intervention, managers in the experimental group received coaching via email for 14 weeks. Data was collected from 938 subordinates and 171 managers who were primarily employed in the banking industry. The managers rated their own IPT in an online questionnaire, and their subordinates filled out a questionnaire that rated their manager's coaching behaviour on three subscales: guidance, facilitation and inspiration. The results of the mixed models procedures in SPSS showed no significant effects of the online coaching intervention on the IPT of the manager or on one of the dimensions of a manager's coaching behaviour. Neither showed the multilevel analysis significant results in predicting the manager's facilitating, guiding or inspiring coaching behaviours through IPT after completing the intervention. This study did not confirm the hypothesised effects, but it did reveal correlations between the age and education level of participants. The highest level of education achieved by the manager was

negatively related to the manager's IPT and positively related to the manager's facilitating, guiding and inspiring coaching behaviour, as perceived by subordinates. The age of the subordinates showed negative effects on the inspiring coaching behaviours of the manager. Additionally, the age of the manager had a negative effect on the manager's guiding, facilitating and inspiring coaching behaviour as perceived by the manager's subordinates. Further research is recommended based on these findings in order to study the effects of the highest education level achieved by the manager on the manager's IPT. Moreover, based on the findings of this study, further study is recommended to explore the effect(s) of the manager's and subordinates' age, the group sizes, the existing relationship between the manager and subordinate and the organizational circumstances in order to understand when an online coaching intervention for the manager may predict the MCB.

Keywords: *online coaching, implicit person theory, managerial coaching behaviour, guidance, facilitation, inspiration, manager, subordinates, age, education, multilevel*

Introduction

Coaching in organizations is provided by (external) professional coaches as an intervention with the purpose to support manager's development and in turn managers are expected to provide facilitating, guiding and inspiring managerial coaching behaviours (MCB) as part of their work-related behaviour in order to support their subordinates' development. Despite the importance of coaching for managers and subordinates there is little known how organizations could implement coaching most effectively. Therefore this study explores how an online coaching intervention for managers could benefit coaching for subordinates within organizations.

When organizations use coaching interventions to support their managers, coaching by means of email is assumed to benefit the effectiveness of the coaching intervention. When most of the learning dialogue takes place using email, either as the sole medium or supplemented by other media, this is called online coaching (Clutterbuck, 2010).

As a result of supporting the manager by online coaching, the manager is likely to experience development to some extent. As a result, the manager is more motivated and confident to continue performance refinement (Bandura, 1977). The performance of the manager is likely to improve when the manager increasingly provides the subordinates coaching support (Evered & Selman, 1989). Towards this end, as an outcome of providing the manager online coaching, it is assumed that the manager will provide their subordinates guiding, facilitating and inspiring coaching behaviour.

A manager's beliefs about the malleability of a person's attributes - otherwise known as the manager's implicit person theory (IPT) is assumed to mediate the effect of the online coaching intervention for the managers on the MCB for subordinates. This study hypothesis that the developmental success of the online coaching intervention for managers convinces the manager that people in general, are capable to develop their characteristics (Heslin,

Latham, & VandeWalle, 2005). In this line, a manager who beliefs characteristics are developmental, known as incremental theorists, should aim for subordinates' development and, therefore, the manager is likely to engage in guiding, facilitating and inspiring coaching behaviours (Heslin et al., 2006).

This study examines whether online coaching - directly and indirectly mediated by a manager's IPT - has a positive effect on manager's facilitating, guiding and inspiring coaching behaviours as perceived by the subordinates. Therefore, the central question of the current study is: *Does supporting a manager through online coaching affect a manager's guiding, facilitating and inspiring coaching behaviour from the perspective of the subordinates, and to what extent is this relationship mediated by a manager's implicit person theory?*

This study aims to contribute to scientific literature that currently has limited evidence for the effectiveness of coaching in organizational context. Moreover, coaching applications in the organizations could be improved as a result of new insights.

Theory

Coaching and online coaching

Coaching is a developmental interaction between a coach and a coachee that aims to improve performance through goal setting, facilitation of new behaviour, feedback and teaching (Ladyschewsky, 2010). Performance improvement through coaching is different than other improvement practices because coaching is about guiding the learning process rather than directing the outcome (Ives, 2008). Coaching therefore focuses on the coachees' self-development. To facilitate the learning of the coachee, the coach helps the coachee to (1) identify desired outcomes of the coaching, (2) translate these desires into specific goals, (3) encourage motivation by self-efficacy, (4) provide and identify resources and specific action

plans, (5) monitor the process and evaluate the progress and (6) make action plans for modification based on feedback (Grant, Passmore, Cavanagh, & Parker, 2010).

In a situation where coaching is supported by online communication channels, this is described as online coaching. Online coaching is defined as “a developmental partnership, in which all or most of the learning dialogue takes place using email, either as the sole medium or supplemented by other media” (Clutterbuck, 2010, p. 4).

Moreover, coaching via email is potentially beneficial for coaching results (Baron, 1998; Rossett & Marino, 2005). When individuals cannot see or hear each other, they tend to increasingly open up (Baron, 1998). During online coaching, the computer intervenes within the communication and the receiver of the message is not visible and an inattention of audience and an illusion of privacy can occur by the mailer (Weisband & Kiesler, 1996). The coachee's increased self-disclosure benefits coaching effectiveness since the coach can understand the coachee more deeply (Marshall, 2006, p. 180). A respondent to the study of Harrington (1998) compared his experience of coaching online with a Catholic confession; the invisibility of the priest fosters openness to confess (Harrington, 1998). The respondent believed that communication by email allows for more objective and honest communication. Users of a more recent study confirmed that it seems “easier to open up to someone who is geographically distant” (Clutterbuck, 2010, p. 14). Whereas role formalities are assumed to limit the openness of coachees, the use of email tries to minimize this negative effect because the email is assumed to benefit the self-disclosure of coachees.

The limited time in manager's agendas might also disturb manager's engagement with behavioural change. The learning process of the manager therefore should be as effectively as possible. Towards this end, Ellinger and Bostrom (2002) found that a learning process was most effective when integrated within the work and when feedback was provided. When applying these findings to the online environment, online coaching is able to provide tailored

guidance and feedback on-the-spot and on-time (Fielden & Hunt, 2011; Rossett & Marino, 2005). Additionally, it was found that learning is more effective by the process of writing (Ensher, Heun, & Blanchard, 2003; Langer & Applebee, 1987). Writing helps the coachee to learn because writing (1) initiates rethinking and revising; (2) requires explicitness and understanding; (3) provides resources to organize and rethink through new relationships among ideas and (4) supports exploration due to its active nature (Langer & Applebee, 1987, p.12-13). Thus, the use of email allows for integration of coaching into daily work and the writing supports effective learning. Therefore, email has the potential to overcome hierarchical and physical barriers (Bloch, 2002, p. 119). The use of email during the online coaching intervention therefore is assumed to benefit the manager's coaching outcomes.

Managerial coaching behaviour

One of the aims of coaching in the context of an organization is to improve performance (Evered & Selman, 1989). To what extent managers coach their subordinates as part of their managerial behaviours determines for a substantive part how well the managers perform (Ellinger, 2013; Ladyshewsky, 2010). In the situation that the manager serves as a coach or facilitator of learning in the workplace, the manager enacts specific behaviours of facilitation for the purpose of subordinates' learning and development (Ellinger, 2013, p. 257). In other words, when managers are coaching, they are providing managerial coaching behaviour (MCB). With respect to MCB, there is a wide variety of coaching behaviours the managers should enact (Ellinger, Ellinger, & Keller, 2003). These different understandings of MCB are analysed by Ellinger et al. (2003) and they concluded that coaching behaviour in general entails listening, analytical, and interviewing skills, effective questioning techniques, observation, giving and receiving performance feedback, communicating and setting clear expectations, and creating a supportive environment.

After performing a literature review, Heslin et al. (2006) divided coaching behaviours into three main elements: guidance, facilitation and inspiration. According to Heslin et al. (2006) coaching behaviour can be described as (1) *guidance* as clear communication of performance expectations, feedback regarding outcomes and instructions for improvement, (2) *facilitation* as the process of helping the subordinate through the exploration and analysis of methods to solve problems or improve performance and (3) *inspiration* that includes the ability of managers to challenge their subordinates to see, understand and develop their own potential (Heslin et al., 2006, p. 878). Therefore, as part of a manager's behaviours, the manager should coach by means of guiding, facilitating and inspiring the subordinates. Because the subordinates are the perceivers of a manager's coaching behaviour, the dimensions of MCB are measured most reliably when rated by the subordinates (Harris & Schaubroeck, 1988).

The direct effect of the online coaching on managerial coaching behaviour

In previous study was found that managers perceived support through coaching as an effective instrument to improve their own performance (Longenecker & Neubert, 2005, p.494). As a result, the managers are likely to accept coaching in order to improve their own performance and for the purpose of performance improvement manager's then are likely to enact guiding, facilitating and inspiring MCB.

When organizations support their managers with coaching, the use of email is expected to especially benefit the coaching outcome. During the online coaching relationship between a coach and a manager, the manager is assumed to engage in self-development. A manager's search for self-development will include deliberate practicing of new behaviours with conscious reflection. As a result, the manager is assumed to experience mastery (Bandura, 1977). Development through mastery experiences will enhance a manager's "conviction that one can successfully execute the behaviour required to produce the

outcomes” (Bandura, 1977, p. 193). During manager’s self-development within the online coaching intervention the manager is assumed to persist the development of the managerial behaviours until the managerial behaviours matches their self-prescribed standards of the personal coach question (Bandura, 1977, p. 193). Moreover, goal setting and self-evaluation are important sources for a manager’s motivation. In this context, motivation is explained as activation and persistence of behaviour (Bandura, 1977). After successful achievement of coaching goals, the manager is assumed to “make self-reward contingent on higher attainments” (Bandura, 1977, p. 193). When a manager seeks to improve during the online coaching intervention, as a part of the performance improvement the manager is likely to coach subordinates because their performance is intertwined (Longenecker & Neubert, 2005). And, besides, providing subordinates coaching by guiding, facilitating and inspiring coaching behaviour is part of manager’s work responsibilities (Longenecker & Neubert, 2005).

In sum, present studies indicate that online coaching can facilitate the self-development of the manager. Subsequently, as a result of deliberate practicing of new behaviours, the manager is likely to experience development. The experienced development enhances confidence and is likely to induce a belief within the manager that the manager is able to succeed in further developments. Previous developmental success therefore has a motivational effect for the manager to continue improvement of performance (Bandura, 1977). As part of performance refinement, managers are likely to increase their MCB by guiding, facilitating and inspiring of subordinates (Heslin et al., 2006; Ladyshevsky, 2010; Longenecker & Neubert, 2005). Organizations are advised to stimulate their managers to commit to self-development in order to become more able and motivated to coach their subordinates (Paustian-Underdahl et al., 2013). The MCB includes guiding, facilitating and inspiring of subordinates and in this line of thought this study presupposes that:

Hypothesis 1A: Online coaching of managers has a direct positive effect on guiding coaching behaviour of the manager as perceived by the subordinate.

Hypothesis 1B: Online coaching of managers has a direct positive effect on facilitating coaching behaviour of the manager as perceived by the subordinate.

Hypothesis 1C: Online coaching of managers has a direct positive effect on inspiring coaching behaviour of the manager as perceived by the subordinate.

Manager's implicit person theory

As the first hypotheses implies, this study assumes that the online coaching of managers will lead to increased MCB to support the subordinates. However, when a manager does not believe that people are capable of developing themselves, then the manager will not expect positive results of coaching. So, before a manager is willing to engage in a coaching relation, the manager has to believe people are capable of change and development (Heslin et al., 2006).

The manager's belief regarding individuals' capability to change personal traits is their implicit person theory (IPT) (Heslin et al., 2006). The IPT that someone has will be either more incremental- or more entity oriented (Dweck & Leggett, 1988; Visser, 2013). The entity person theory sees attributes like personality and intelligence as fixed and hard to change. Its counterpart, the incremental person theory, is the belief that people's attributes are malleable and can be developed (Heslin, Latham, & VandeWalle, 2005; Heslin & VandeWalle, 2008; Heslin et al., 2006; Latham, 2007). Dweck (2006) extended her research to several fields of study and writes about "fixed" and "growth" mind-sets. The fixed mind-set is a new label for the entity implicit theory (Heslin & VandeWalle, 2008). The ones who hold a growth mind-set are the "incremental theorists" (Heslin & VandeWalle, 2008). Dweck and Leggett (1988) stated that these mind-sets are two completely different ways of how one can perceive life.

Therefore, one's mind-set will have important differences when considering the consequences for the behaviour, performance, and development of an individual (Visser, 2013). In this context, the influence of a manager's IPT on the coaching behaviour is especially relevant.

Moreover, a study of Kam, Risavy, Perunovic, and Plant (2012) supported the relevance of a manager's IPT in an organization's context. Kam et al. (2012) tested whether subordinates were motivated to form an impression of the IPT of the manager, and if they did, how they perceived the manager's IPT. The data of the study of Kam et al. (2012) showed that subordinates were motivated to formulate an impression of their manager's IPT. Furthermore, subordinates' impressions were found to be relatively consistent among the subordinates of one manager. This indicates that the subordinates perceive the same IPT for their manager. Of interest for this study is the fact that the manager's IPT is recognized by the subordinates and is therefore likely to play an important role in the manager-subordinate relation.

The effect of online coaching on the manager's implicit person theory

As a result of online coaching, the manager is expected to experience development. The improved performance is the result of a manager's mastery of experiences guided by a mindful process facilitated by a coach. Therefore, as a result of online coaching, the manager will experience, to some extent, conscious development in areas that the manager previously perceived as areas that needed improvement. These positive, developmental experiences are expected to prove to the manager that subordinates are also capable of substantial improvement when they are provided appropriate coaching and needed support (Heslin et al., 2006, p. 897). So, as a result of online coaching, the manager will develop a more growth-oriented mind-set. Conscious experiences of development are assumed to be effective in order to induce a growth mind-set because the information comes from a source that is considered as a credible, trustworthy, and respected source - namely, themselves (Heslin et al., 2005).

As additional support, earlier studies indicate that self-convincement is an effective mechanism to induce a growth mind-set (Heslin et al., 2005; Visser, 2013). Of interest for this study are the series of studies of Heslin et al. (2005); Heslin et al. (2006) and the study of Visser (2013). Heslin et al. (2005) designed a 90-minute workshop to induce a growth mind-set within the participating managers. The workshop included five steps; each step was based on a principle of self-persuasion. The results of the study of Heslin et al. (2005) demonstrated a significant change within the mind-set of the manager showing an increased belief in the incremental person theory as a result of the workshop. The resulting effects endured for six weeks (Heslin et al., 2005).

For the same purpose, the study of Visser (2013) made use of loaded questions in order to induce a growth mind-set within the participant. A loaded question is a question including explicit presumptions, for example Visser (2013) aimed to induce a growth mind-set by asking the respondents whether they “had heard about four scientific findings associated with people’s ability to learn and change” (Visser, 2013). Loaded questions have a convincing effect because, when the respondent answers the question, the respondent indirectly agrees with the presumption that was included in the question (Visser, 2013). The study of Visser (2013) demonstrated that the loaded questions had a significant impact on a participant’s mind-set. Both studies concluded that a manager’s belief in the malleability of intelligence and/or other attributes that are perceived as relatively stable within a person is found to be changeable by the principles of self-convincement (Heslin et al., 2005; Visser, 2013).

Knowing this, organizations are advised to adapt an HR intervention that changes manager's mind-set towards a more growth-oriented mind-set (Heslin & VandeWalle, 2008). Current study tries to fulfill this demand by coaching managers via email. Online coaching is the chosen method because the manager's experiences of development will demonstrate to the manager that, in general, people are able to change. Therefore, this study assumes that:

Hypothesis 2: The online coaching of the manager has a positive effect on the extent to which manager's belief in the incremental person theory.

The effect of the manager's implicit person theory on the manager's coaching behaviour

As assumed in the second hypothesis, online coaching of the manager is likely to induce a growth mind-set within the manager. People's mind-sets are believed to have a significant effect on how people attribute behaviour in others (Dweck & Leggett, 1988). Explained by the attributional approach, incremental theorists are expected to attribute failure to be caused by situational factors (Dweck & Leggett, 1988). Therefore, in contrast to the entity theorists, incremental theorists are less likely to blame uncontrollable factors. In the context of a social environment, entity theorists are likely to use stereotypes, whereas incremental theorists explain negative behaviour by situational, controllable factors. Therefore, "they (incremental theorists) should be more willing to engage in behaviour that will facilitate desired change in the other person" (Dweck & Leggett, 1988, p. 268). This is due to the fact that, when people believe that situations or things can be developed or changed, they will work towards effecting this development or change. Therefore, incremental theorists are more likely to focus on the personal attributes of others by striving to teach them new skills (Dweck & Leggett, 1988).

In an organizational context, the attributional approach of Dweck and Leggett (1988) suggests that a manager with an incremental person theory is assumed to believe that

subordinates are able to change relatively stable traits. Therefore, a manager with a growth mind-set is likely to aim for development of the subordinates (Dweck & Leggett, 1988).

Towards this end, a manager who believes in the incremental person theory is likely to engage in managerial coaching behaviour. Thus, in short, the attributional approach states that managers with a growth mind-set believe that situations and persons can be changed and developed; therefore, managers will behave towards this end.

The assumed relation between the growth mind-set and guiding, facilitating and inspiring MCB is supported by Heslin, Vandewalle, and Latham (2006). Heslin et al. (2006) did a sequential study and extended the workshop intervention of Heslin, Latham, and VandeWalle (2005) with a video and a questionnaire. After the 90-minute workshop in the study of Heslin et al. (2005), a video was shown to the participants of a poorly performing employee. Subsequently, the participants were asked to rate the performance of this employee, indicate their willingness to coach and describe suggestions for performance improvements for the subordinate. Of interest here are the results on the coaching intentions of the participant. Heslin et al. (2006) found that the incremental person theory was positively related to a participant's intention to support the employee by means of providing guiding, facilitating and inspirational coaching behaviour. Therefore, supported by the evidence of Heslin et al. (2006) and the attributional approach of Dweck and Leggett (1988), this present study hypothesises:

Hypothesis 3A: A manager's belief in the incremental person theory is positively related to the guiding coaching behaviour of the manager, as perceived by the subordinate.

Hypothesis 3B: A manager's belief in the incremental person theory is positively related to the facilitating coaching behaviour of the manager, as perceived by the subordinate.

Hypothesis 3C: A manager's belief in the incremental person theory is positively related to the inspiring coaching behaviour of the manager, as perceived by the subordinate.

The indirect effect of online coaching on managerial coaching behaviour mediated by the manager's belief in the incremental person theory

Online coaching is assumed to have a positive effect on a manager's guiding, facilitating and inspiring coaching behaviour and belief in the incremental person theory. The fundamental assumption is that the online coaching intervention for managers is likely to result in managers' development. As a result of conscious development, the manager is likely to believe traits are malleable and hold an incremental person theory. One's implicit person theory is assumed to determine to what extent one perceives situations as controllable. People who belief in the incremental person theory will attribute failure towards controllable factors. Because incremental theorists believe that a situation is within their control and is therefore changeable, they are likely to be motivated to develop their environment. In the context of this study, it is assumed that managers who belief in the incremental person theory believes people are capable to develop themselves. This belief has two important implications for a manager's intention to coach. On one hand, the manager believes in his or her own capability to become a good coach, and on the other hand, the manager believes in a subordinate's capability to develop as a result of coaching. As a result, the manager is likely to enact guiding, facilitating and inspiring MCB.

It can be concluded that coaching the manager online is likely to positively affect a manager's guiding, facilitating and inspiring coaching behaviour. During the online coaching intervention, the managers are facilitated in their own development. The experiences of developmental success will convince the manager that, in general, people are able to develop. As a result, the manager will believe that he or she can become a good coach and that

subordinates can develop provided that they receive the right coaching support. Moreover, a manager that belief in the incremental person theory will seek to develop subordinates by providing them coaching via guiding, facilitating and inspiring coaching behaviour.

Therefore, the following hypothesis summarizes the mediated effect:

Hypothesis 4A: Online coaching of managers has an indirect positive effect on the guiding coaching behaviour of the manager as perceived by the subordinate, via the manager's belief in the incremental person theory.

Hypothesis 4B: Online coaching of managers has an indirect positive effect on the facilitating coaching behaviour of the manager as perceived by the subordinate, via the manager's belief in the incremental person theory.

Hypothesis 4C: Online coaching of managers has an indirect positive effect on the inspiring coaching behaviour of the manager as perceived by the subordinate, via the manager's belief in the incremental person theory.

All hypotheses are summarized in de conceptual model represented in Figure 1.

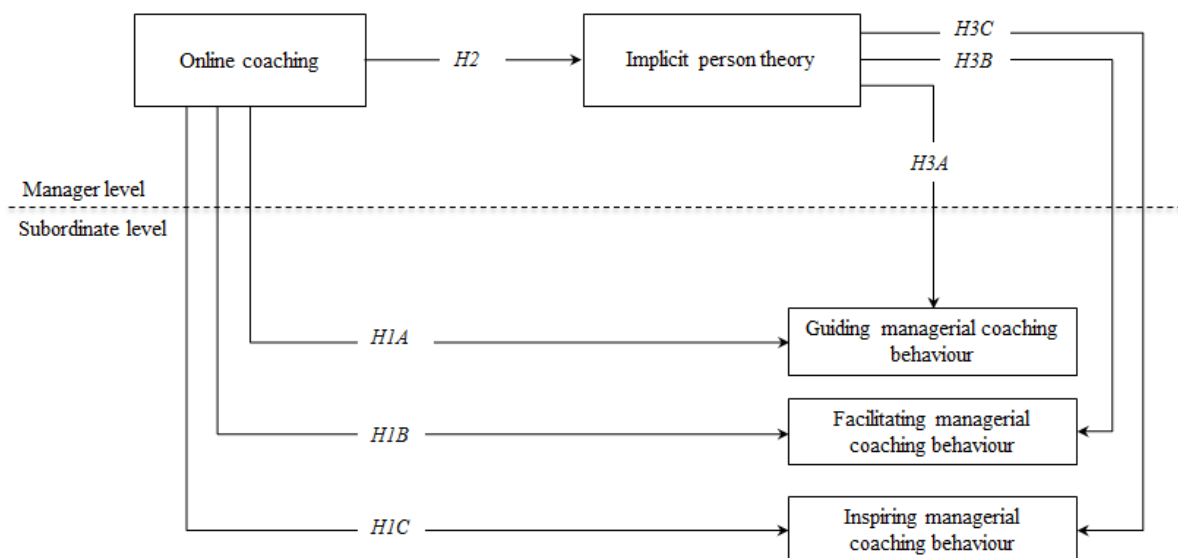


Figure 1. Conceptual model of the mediated effect of online coaching on managerial coaching behaviour

Method

Study design

The original study is a quasi-experimental research including pre- and post-measurements of a control and experimental group. Since the same instruments are used on different measurement moments this study is longitudinal (Pallant, 2010). Data is collected among multiple sources since the variables of interest are measured on the level of the subordinates and on the level of the manager. Using multiple subordinates to rate manager's MCB enhances the reliability of the study (Harris & Schaubroeck, 1988). The subordinates are nested within the managers which makes this study multilevel (Hayes, 2006).

The original study made use of four measure moments and the data collection was spread among six different cohorts. The use of cohorts had practical relevance because not all managers could be coached simultaneously by the online coaches. Of all six cohorts, the current study made use of the data collected by cohorts 2, 4, 5 and 6 only because cohorts 1 and 3 did not include a control group. The survey was measured on four different measurement moments. Only data from the first two measure moments, ($t=0$) one day before the intervention and ($t=1$) three months after the first measure moment, were used.

Participants

There is a distinction made between the data of the managers and subordinates. Before the intervention the experimental condition included 112 managers ($N=171$) and 637 subordinates ($N=938$) and the control condition existed of 59 ($N=171$) managers and 301 subordinates ($N=938$).

Table 1 represents the characteristics of the managers at $t=0$ and $t=1$ reported separately for the control and experimental group. Table 2 shows subordinates' characteristics for $t=0$ and $t=1$ represented the control and experimental group separately. At $t=0$, the managers' mean age was 44.59 years ($SD=8.21$, age range: 29-61 years); 76 were female and

93 were male, two managers did not (correctly) answer their gender. The survey also included questions about the manager's current work situation. On average, the managers had 12 subordinates ($N=167$, $SD=11$ subordinates) and 7.67 years of managerial experience ($N=171$, $SD=6.77$ years). The majority, 72.5% of all managers, was employed at a bank. Two managers did not (correctly) answer the question, so their scores were identified as missing. Since the managers were approached via intranet or email, the response rate is unknown.

Before the intervention, the subordinates were between 22 and 66 years old ($N=896$, $M=44$ years, $SD=10$ years). Of all subordinates, 431 were female and 476 were male. 31 respondents did not (correctly) fill in their gender. The subordinates worked in very different group sizes and their years of experience within their current team were also widespread. Therefore the standard deviations are high. On average, a team had 13 subordinates ($N=882$, $SD=10$) and they had been part of this team for 3.66 years ($N=860$, $SD=4.97$ years). After the intervention 294 subordinates were female and 327 were male. 111 respondents did not (correctly) fill in their gender. This number of missing scores is relatively high (15.16%) without clear indication of why this data was filled out incorrectly.

To test the equivalence of the characteristics of the experimental and control group, independent t-tests and Chi-square tests were conducted. Only the distribution of gender of the subordinates showed significant differences between the experimental ($M=.50$, $SD=.50$) and control group ($M=.58$, $SD=.494$; $t(907)=-2.27$, $p=.023$, two-tailed) before the intervention ($t=0$). These results suggest a relatively higher proportion of males in the control group. The magnitude of the mean differences in the proportion of gender distribution (mean difference = $-.081$, 95% CI: $-.150$ to $-.011$) was very small (eta squared = $.006$) (Cohen, 1988). After the intervention, the characteristics of the subordinates did not show significant differences between the experimental and the control group. Because of the effect size of the difference in distribution of gender at $t=0$ was very small and was not found at $t=1$, the results

suggest that overall the control and experimental groups of the managers and subordinates seemed comparable. However, because the missing value of subordinates gender at $t=1$ was remarkably high, these results should be interpreted carefully.

Procedure

The researchers contacted organizations by convenient sampling. The managers were invited to participate via email or intranet. Managers could participate provided that they had at least three subordinates that would participate. When the managers expressed interest and could comply with this requirement, the researchers confirmed a manager's enrolment by email. The participating managers were randomly divided among the control and the experimental groups. A list of managers was established based on the ascending date of registration. The list ranked all managers from one to three. The managers with number one and three were selected for the online coaching intervention. The managers with number two were assigned to the control group. The managers of the interventional group received online coaching. The subordinates were not informed as to which group their manager was assigned. As a reward for participation, the managers of the control group were also offered coaching afterwards.

Coordinators for the participating organizations contacted potential coaches or HR professionals within their existing database. These potential coaches received training for development as an online coach. Later in the study, professional online coaches from the researchers' network were also included in the intervention. These professional online coaches had indicated that they would like to participate in the research. In total, twenty online coaches provided coaching for the managers. Sometimes the managers of the interventional group requested an external coach, especially within the relatively smaller organizations. The researchers carefully matched an external or internal coach to a manager with the purpose to ensure confidentiality.

Before the manager and coach got in touch, the manager and his subordinates filled in the online Measures of Managerial Coaching Skills (MMCS) questionnaire. The first week online, the coach introduced the Coach Campus[®]. Coach Campus[®] is an online secured environment where the coach and manager can communicate. First the coach had to assist the manager to get familiar with the Coach Campus[®]. The coaches were instructed to discuss the expectations of the coaching relationship with the manager. Besides the coaches were instructed to ask the manager to share information regarding prior work experiences and manager's motivation for participation in the study. During the third week of the intervention, the coach shared the results of the online MMCS questionnaire with the manager. Based on this information, the researchers instructed the coaches to ask the manager to formulate a coaching question. The following eleven weeks were used to coach based on the personal coaching question of the manager. As guidelines the researchers instructed the coaches to include in the coaching: 1) creating consciousness of managers own managerial coaching skills, 2) training in managerial coaching skills and their positive relation to managerial effectiveness, 3) development of the manager's skills through written exercises and behavioural experiments and 4) evaluation and feedback.

All respondents (managers and subordinates) were invited to take an online survey. The questionnaire was built of different measures of managerial coaching scales and scales regarding engagement, personality, life satisfaction and performance. The survey was Dutch and thus non-Dutch speakers or managers and subordinates without internet access were eliminated from participation.

Table 1. Characteristics of the managers (level-2)

<i>Characteristics</i>		<i>Mean/ % experimental group</i>		<i>Mean/ % control group</i>		<i>Mean/ % all respondents</i>	
		<i>T=0 (N= 112)</i>	<i>T=1 (N=94)</i>	<i>T=0 (N= 59)</i>	<i>T=1 (N= 55)</i>	<i>T=0 (N=171)</i>	<i>T=1 (N= 149)</i>
Gender	Female (0)	49.1% (N=55)	50% (N= 47)	35.6% (N= 21)	36.4% (N=20)	44.4% (N= 76)	45% (N= 67)
	Male (1)	50.9% (N= 57)	50% (N= 47)	61% (N= 36)	58.2% (N=32)	54.4% (N= 93)	53% (N= 79)
Age (in decennia's)		4.448 (SD= 0.840)	4.498 (SD= 0.831)	4.481 (SD= 0.790)	4.547 (SD= 0.784)	4.459 (SD= 0.821)	4.515 (SD= 0.813)
Education	Master (WO)	37.5% (N= 42)	40.4% (N= 38)	18.6% (N= 11)	18.2% (N=10)	31% (N= 53)	32.3% (N= 48)
	Bachelor (WO/HBO)	49.1% (N=55)	45.7% (N= 43)	64.4% (N= 38)	61.8% (N=34)	54.4% (N= 93)	51.7% (N=77)
	Secondary Education (VWO/HAVO)	5.4% (N=6)	5.3% (N= 5)	6.8% (N= 4)	7.3% (N= 4)	5.8% (N= 10)	6% (N= 9)
	Vocational Education (MBO/MAVO/VMBO)	8.0% (N=9)	8.5% (N= 8)	6.8% (N= 4)	7.3% (N= 4)	7.6% (N=13)	8.1% (N= 12)
	Pre-vocational Education (LBO/VBO)	0% (N= 0)	0% (N= 0)	0% (N= 0)	0% (N= 0)	0% (N= 0)	0% (N= 0)
	Elementary school	0% (N= 0)	0% (N= 0)	0% (N= 0)	0% (N= 0)	0% (N= 0)	0% (N= 0)
Organization	Organization 1: Supermarket	0% (N= 0)	0% (N= 0)	0% (N= 0)	0% (N= 0)	0% (N= 0)	0% (N= 0)
	Organization 2: Bank	69.6% (N=78)	66% (N= 62)	78% (N= 46)	76.4% N=42)	72.5% (N= 124)	69.8% (N= 104)
	Organization 3: University A	8.0% (N=9)	9.6% (N= 9)	3.4% (N= 2)	1.8% (N= 1)	6.4% (N=11)	6.7% (N= 10)
	Organization 4: University B	4.5% (N= 5)	5.3% (N= 5)	1.7% (N=1)	1.8% (N= 1)	3.5% (N=6)	4% (N= 6)
	Organization 6: Different	17.9% (N= 20)	19.1% (N= 18)	13.6% (N=8)	14.5% (N= 8)	16.4% (N=28)	17.4% (N= 26)
Tenure (in months)		120.92 (SD=121.59)	118.56 (SD= 119.39)	127.11 (SD= 100.44)	133.47 (SD= 102.374)	123.04 (SD= 114.486)	123.99 (SD= 113.345)
Group size (subordinates)		11.03 (SD= 7.920)	11.42 (SD= 8.345)	13.70 (SD= 11.653)	14.46 (SD= 11.878)	11.95 (SD= 9.429)	12.54 (SD=9.855)
Experience as a manager (in years)		7.41 (SD= 6.794)	7.65 (SD= 7.092)	8.18 (SD= 6.752)	8.59 (SD= 6.797)	7.67 (SD= 6.769)	7.99 (SD= 6.979)

Table 2. Characteristics of the subordinates (level-1)

Characteristics		Mean/ % experiment group		Mean/ % control group		Mean/ % all respondents	
		T=0 (N= 637)	T=1 (N=480)	T=0 (N= 301)	T=1 (N= 252)	T=0 (N=938)	T=1 (N= 732)
Gender	Female (0)	48.7% (N=310)	42.5% (N= 204)	40.2% (N=121)	35.7% (N=90)	45.9% (N= 431)	40.2% (N=294)
	Male (1)	48.5% (N=309)	43.8% (N=210)	55.5% (N=167)	46.4% (N=117)	50.7% (N= 476)	44.7% (N=327)
Age (in decennia's)		4.415 (SD=1.042)	4.4386 (SD=1.016)	4.469 (SD=1.008)	4.537 (SD=0.972)	4.6468 (SD=3.05)	4.4712 (SD=1.002)
Education	Master (WO)	20.3% (N=129)	19.4% (N=93)	20.9% (N=63)	19.4% (N=49)	20.5% (N= 192)	19.4% (N= 142)
	Bachelor (WO/HBO)	41.6% (N=265)	37.5% (N=180)	40.2% (N=121)	33.7% (N=85)	41.2% (N= 386)	36.2% (N=265)
	Secondary Education (VWO/HAVO)	14.1% (N=90)	11.9%(N=57)	14.3% (N=43)	11.9% (N=30)	14.2% (N=133)	11.9% (N=87)
	Vocational Education (MBO/MAVO/VMBO)	20.4% (N=130)	17.1% (N=82)	19.6% (N=59)	16.3% (N=41)	20.1% (N=189)	16.8% (N=123)
	Pre-vocational Education (LBO/VBO)	0.6% (N=2)	0.2% (N=1)	0.3% (N=1)	0.4% (N=1)	0.3% (N=3)	0.3% (N=2)
Elementary school		0.5% (N=3)	0.2% (N=1)	0.3% (N=1)	0.4% (N=1)	0.4% (N= 4)	0.3% (N=2)
Co-workers in team		13.14 (SD=9.999)	13.15 (SD=10.575)	14.11 (SD=11.02)	14.67 (SD=12.048)	13.45 (SD=10.340)	13.66 (SD=11.103)
Participation team* (in years)		3.62 (SD=4.832)	3.76 (SD=5.291)	3.73 (SD= 5.244)	3.92 (SD= 5.611)	3.66 (SD= 4.968)	3.82 (SD= 5.398)

*Participation team= The number of years that the subordinate is part of the team

After the 14-week coaching cycle, the managers and the subordinates filled in the MMCS questionnaire again. The questionnaire was sent to the experimental group and the control group. The survey was online, but it was not part of the online coaching environment. The results of the second measure moment were only used for the study. All communication between the manager and the coach was exclusively conducted within the Coach Campus[®]. The coaches were instructed to have at least two contact moments per week. The coaches tracked the contact moments, and after the intervention, it seemed that on average, the manager and coach followed this basic guideline.

Instruments

The online survey. There were two versions of the online questionnaire: one version was formulated to measure managers' scores, and the other version was formulated to measure subordinates' scores. The manager's version included 154 items based on 13 existing instruments. The managers of the experimental condition were asked nine additional questions to test managers' expectations of the coaching before the intervention and to test whether these expectations were met after the intervention. On the manager's level, the data gathered by the "kind-of-person" implicit theory instrument of Chiu, Hong, and Dweck (1997) was selected for testing of the hypothesis.

The subordinates' questionnaire had 139 items based on 12 existing instruments. The data collected by the coaching behaviour scale of Heslin et al. (2006) was used to test for the dependent variable on the subordinates' level, managerial coaching behaviour.

The measure of managerial coaching behaviour. The dependent variable was measured before and after the online coaching by the Behavioural Observation Scale of Coaching Behaviours (BOSCB) of Heslin et al. (2006). The original scale of Heslin et al. (2006) consists of ten items divided among three subscales. The subscale for guidance

consists of four items. The subscale for facilitation and inspiration were consists of three items each. Heslin et al. (2006) tested the scale as part of a feedback-questionnaire. Towards that end, Heslin et al. (2006) prefaced the original scale with the following introduction: "To what extent does the person to whom you are providing feedback" (Heslin et al., 2006, p. 878). To assess the subordinates' perception of managers coaching behaviour in the context of this study the researchers introduced the questionnaire by the following introduction:

Below you will find a number of questions which define certain behaviour. Enter per question to what extent your supervisor provides these behaviours. You can choose from five response options. Choose the one that best fits your opinion.

Next, the questionnaire prescribed "My supervisor...". The subscale measuring for guidance included statements like "Provides guidance regarding performance expectations" (Heslin et al., 2006, p. 879). The subscale used for measuring facilitation included statements like "Act as a sounding board to develop my ideas," and the subscale inspiration was measured by statements like "Express confidence that I can develop and improve." The subordinates could answer their ratings of these statements on a five-point Likert-type scale with the anchors 1= *not at all* to 5= *to a very great extent*. The written items and answer rating scale were originally in English and were translated to Dutch by the researchers Ribbers, Waringa, Poell en van Woerkom. To some extent, the formulation of the original scale was adjusted to fit the introduction of the items. The Cronbach's alpha of the original scale was .89 (Heslin et al., 2006). In the current study, the Cronbach's alpha of the scale, based on subordinates' data, was 0.935 at t=0 and 0.945 at t=1. For the comparison of groups, the Cronbach's alpha values were between 0.7 and 0.8, which is perceived as satisfactory by Bland and Altman (1997). None of the items scored a higher Cronbach's alpha after deletion; therefore, all items were included in the data. According to this standard, the scale is assumed to be reliable and therefore consistent. A PCA of the data before the intervention showed three

components, but the factor loadings did not perfectly fit the theoretical subscales. After the intervention at t=1 the PCA showed factor loadings identical to the subscales as proposed by the theory. The results of the PCA and the Cronbach's alpha's can be found in Table A1 and A2 in the appendix.

The measure of the implicit person theory. The mediating variable IPT was assessed by a "kind-of-person" implicit theory measurement constructed by Chiu et al. (1997). The measure of Chiu et al. (1997) aimed to test managers' implicit person theory before and after the intervention. This is an eight-item scale written in English. The researchers translated the items and answer scale to Dutch. The items were prefaced with the introduction sentence:

These questions are about the nature of the human being and your perspective. For each item there is an answer scale from 1 to 6.

Subsequently, the first four items aimed to measure the incremental beliefs. An example statement is, "People can even change their most basic properties." The remaining four items aimed to measure the entity beliefs. An example statement is, "What kind of person someone is, is something very fundamentally, what you cannot to change." Managers' responses were rated on a six-point Likert-type scale with the anchors 1= *completely agree* and 6= *strongly disagree*. The scores on the four entity statements were reversed so that a high score represent an incremental IPT. The reliability analysis of the study of Chiu et al. (1997) suggests that the scale is reliable with a Cronbach's alpha between 0.73 and .90. In the current study, the Cronbach's alpha was .643 before the intervention. After the intervention, the Cronbach's alpha dropped and had a value of .601. The correlation would be .661 if item three were deleted, and if item four were deleted, the correlation would be .677. A PCA was run and the factor loadings did not perfectly fit the theoretical subscales, neither before nor after the intervention.

When dividing the scale in two subscales, the Cronbach's alpha of the entity subscale was .179 before the intervention. The four items of the incremental person theory showed a Cronbach's alpha value of .784 before the intervention and .821 after the intervention. After content analysis, it was concluded that the formulation of the entity items were relatively suggestive. For example within the fourth item it was stated: "No matter how hard I find it to admit...". As a result, the four IPT items measuring the entity theory were removed from the scale. Then the KMO of the IPT scores was .774 before the intervention and .759 after the intervention. For both measurement moments, the data suggested the results of the Barlett's test of sphericity was significant ($p < .001$). The un-rotated principal component analysis showed one component that explained 61.138% before and 65.254% of the total explained variance after the intervention. The results of the PCA and the Cronbach's alpha's can be found in Table A3 and A4 in the appendix.

Control variables. The regular demographic variables age (in decennia's), gender and education level were included in the study. Gender was a dummy variable and the females were the reference category.

Statistical analysis

For the statistical analyses, SPSS 19 for Windows was used. First, the data was checked for outliers and missing data. No outliers were found for manager's coaching behaviour as perceived by the subordinate or for manager's implicit person theory. A few outliers were identified in the control variable age and identified as missing values. To minimize the negative effect of missing data, the option "exclude cases pair wise" was used.

To test the hypotheses, a multilevel mediation model, as shown in Figure 1, needed to be tested. The manager's data represents level-2 and the subordinates' data is measured on level-1. Because the antecedents and mediator are level-2 variables and the dependent variable is a level-1 variable, a 2-2-1, cross-level, lower mediation was needed (Mathieu & Taylor, 2007). First a null (no- predictors) model with restricted maximum likelihood was run to find the between-group and within-group variance components. The group exists of the subordinates that are working for the same manager. The intra-class correlation coefficients (ICC) between manager's subordinates were calculated by dividing the between-group variance by the sum of the between-group variance and the within-group variance (Heck, Thomas, & Tabata, 2013). Some argue that if the ICC value is close to zero, a multilevel analysis would not be necessary (Hayes, 2006). If the ICC is below 0.05, which is generally considered as the cut-off score, this would indicate that there is less than 5% of variation between groups (Heck et al., 2013). This study's ICC values are found in Table 4. Since the ICC of the managerial coaching behaviour was at least .61 in earlier studies (Bliese, 2000), the ICC's of the current study are relatively low. However, the ICC's of this study still indicate that a part of the variance of guiding, facilitating and inspiring MCB is explained by variation between the groups of the subordinates, therefore the use of a multilevel analysis is validated (Hox, 2002).

Table 4
Intra-class Correlations

Variable	Individual-level variance (σ^2)	Work unit-level variance (τ^2)	ICC
Guidance	.408	.126	.236
Facilitation	.454	.090	.165
Inspiration	.481	.109	.185
IPT	.102	.687	.129
ICC Formula: $\tau^2 / (\sigma^2 + \tau^2)$ (Heck et al., 2013)			

To test whether online coaching had a direct effect on the guiding, facilitating and inspiring managerial coaching behaviour, a model with randomly varying intercepts was run (M1). Subsequently, the second model (M2) tested the effect of the control conditions on subordinates' level: age, gender and education. The third model (M3) added the time, intervention and the effect of the intervention over time into the model. A new multilevel analysis was run to test the effect of the manager's IPT on the guiding, facilitating and inspiring MCB. Again, the first model run was a model with randomly varying intercepts (M1). The second model included the control variables of the subordinates and the managers (M2). The third model included manager's IPT (M3) and the last model included the time, intervention and the effect of the intervention over time (M4). These four models were run for the three different subscales of managerial coaching behaviour.

Full Information Maximum Likelihood (FML) was used for model comparison because the analysis focused on the fixed effects (Hayes, 2006). The log-likelihood statistic (-2LL) and the change in the number of parameters (df) were used to perform the Chi-squared (χ^2) tests to verify whether the more complex model fits the data better than a simpler model (Heck et al., 2013).

To test the effect of the online coaching intervention on manager's IPT, a multilevel analysis was run. First, a null model was used to test whether there was significant unexplained variance between the managers. Herewith, the use of a nested model was validated (Figure 4). The first model tested the random variance of the intercepts of the IPT (M1). The second model (M2) added the control variables on the level of the manager. The last model (M3) included time, the intervention and the interaction effect of the intervention.

To test the mediation effect, three hypotheses were formed. A mediation effect needed to be tested by a Sobel test (Sobel, 1982). However, the Sobel test was only run provided that the guidelines of MacKinnon, Fairchild, and Fritz (2007) were met.

Results

Descriptive statistics and correlations

Table 5 shows the means, the standard deviations and the correlations of the manager and subordinates scores. Pallant (2010) stated that correlation analysis should include at least 20 cases. The current study had at least 149 cases, so the required condition was met. For interpreting the correlation coefficients, the current study used the rule of thumb that states that r values of .50 or higher indicate a large correlation between variables (Pallant, 2010). According to this guideline, the correlations between the subscales of MCB as perceived by the subordinates before the intervention had high positive correlations with the subscales measured after the intervention since the MCB measured over time had a minimum correlation of .505 ($p < 0.01$). The mutual correlation of the three different subscales measuring for MCB was also strong and positive. Before the intervention, the subscales had a minimum correlation of .687 ($p < 0.01$). After the intervention the subscales were also highly correlated and the minimal correlation value remained .687 ($p < 0.01$).

The manager's IPT before the intervention was positive and strongly correlated ($r = 0.646$; $p < 0.01$) with manager's IPT after the intervention. Before the intervention manager's IPT was negatively related to the guiding ($r = -.117$; $p < 0.01$) and inspiring ($r = -.112$; $p < 0.01$) coaching behaviour. After the intervention manager's IPT was negatively related to the guiding coaching behaviour ($r = -.109$; $p < 0.05$). Thus, in contrast to the hypothesized positive correlation between manager's IPT and dimensions of MCB as perceived by the subordinate the correlations were negative. The effect size of these negative correlations is relatively small (Pallant, 2010).

Table 5
Means, Standard Deviations and Correlations

	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12
1 Intervention	0.68	0.467												
2 Gender ^{1A3}	0.52	0.500	-.075*											
3 Age ^{1A}	4.432	1.031	-0.025	-0.023										
4 Education ^{1A}	2.380	1.072	0.009	-0.112**	.249**									
5 Organization ^{1B}	2.740	1.447	0.076*	-0.269**	-0.013	0.043								
6 Guidance ^{1A}	3.474	0.719	-0.014	0.027	-0.099**	0.046	-0.141**							
7 Facilitation ^{1A}	3.648	0.718	0.007	-0.023	-0.088*	0.000	-0.044	0.700**						
8 Inspiration ^{1A}	3.790	0.757	-0.044	0.012	-0.150**	-0.006	-0.097**	0.687**	0.712**					
9 IPT ^{1B}	3.740	0.903	0.061	-0.077*	0.034	-0.129**	0.121**	-0.117**	-0.065	-0.112**				
10 Guidance ^{2A}	3.484	0.746	-0.023	0.065	-0.077	0.058	-0.184**	0.693**	0.582**	0.599**	-0.149**			
11 Facilitation ^{2A}	3.643	0.762	0.019	0.046	-0.030	-0.006	-0.111**	0.505**	0.654**	0.545**	-0.098*	0.710**		
12 Inspiration ^{2A}	3.767	0.787	-0.044	0.049	-0.118**	0.002	-0.170**	0.534**	0.568**	0.676**	-0.094*	0.687**	0.743**	
13 IPT ^{2B}	3.705	0.876	0.021	-0.056	-0.049	-0.172**	0.078	-0.153**	-0.079	-0.104*	0.646**	-0.109*	-0.024	-0.051

Note: ¹Scores at t=0. ²Scores at t=1. ³Dummy variable with female as the reference group. Intervention= 1= experimental group and 0= control group. Age= in decennia's. *p < .05, ** p < .01;
^A Descriptives and correlations are reported at the subordinates level. ^B Descriptives and correlations are reported at the manager level. Valid N = 854 subordinates at t=0 and 512 subordinates at t=1 and 171 managers at t=0 and 149 managers at t=1

The gender distribution among the subordinates before the intervention showed a small negative correlation with the gender distribution among the subordinates of the experimental group ($r=-0.075$; $p < 0.05$). These results confirmed the earlier finding of the t-test that showed a significant difference and indicated that there were relatively more male respondents in the experimental condition than in the control condition before the intervention.

Also the organization was positively correlated with the intervention, indicating that there was a significant difference between the organizations the subordinates of the experimental conditions were employed compared to the organizations the subordinates of the control condition were employed. However, the gender of the subordinates and the organization they worked for is uncorrelated with the dimensions of MCB as perceived by the subordinates. The correlations' coefficients did not take into account that the data that was measured at the manager- level was smaller than the sample for the subordinate data.

Model and hypothesis tests

The hypotheses including the direct effect of the intervention on the manager's coaching behaviour were tested with three sets of nested models in SPSS. Each model included one subscales; guidance, facilitation or inspiration as perceived by the subordinate, as a dependent variable. The first step was to include control variables into the empty model (M2). Second, online coaching as a predictor was added in the model by the inclusion of time, intervention and effect (time*intervention) (M3).

For testing the effect of manager's implicit person theory on the coaching behaviour of the manager, a new multilevel analysis with four nested models was run. The null model for testing the intra-class correlation and the empty model with random effects are identical to the first multilevel analysis. In the second model (M2) manager's and subordinates age, education and gender were included as control variables. To test the effect of the IPT on the dependent

variables, manager's IPT was included (M3). In the last model the time, intervention and the effect of the intervention was added to the model (M4).

The effect of the online coaching intervention on the mediator IPT (H2) was tested in a third mixed models analysis. In this analysis, the dependent variable was manager's IPT. First, a null model was run to validate the use of nested models (M0). The first (M1) model included the manager's IPT and tested for the random effects. The second model (M2) included manager's gender, education and age as control variables. In the third model, the time, intervention and the interaction effect of the time and intervention was added (M3).

Predicting manager's guiding coaching behaviour as perceived by the subordinates

To test the direct effect hypothesized in hypothesis 1A, regarding the positive direct effect of the online coaching intervention on manager's guiding coaching behaviour, three nested models were run. The output of the multilevel analysis can be found in Table 6. The first model (M1) showed that for both the subordinates' level ($\sigma^2 = 0.408$; $p < .001$) and the manager's level ($\tau^2 = 0.125$; $p < .001$), there was significant unexplained variance. Therefore, the control variables at the individual level and the intervention and IPT at the manager level had the potential to predict manager's guiding coaching behaviour as perceived by the subordinate.

The second model (M2) included the control variables on subordinates' level as covariates. None of the control variables was significantly related to managers' guiding coaching behaviour. However, this more complex model predicted the guiding coaching behaviour as significantly better than the simple model without predictors ($\chi^2 = 257.765$; $df = 3$; $p < .001$).

The third model (M3) included the time, intervention and the effect of the time and intervention on the second level. No significant effect was found, nor did this model significantly improve the prediction of the guidance behaviour of the manager and hypothesis 1A was not accepted.

To test the direct effect of manager's IPT on manager's guiding coaching behaviour as perceived by the subordinate, hypothesized in hypothesis 3A, a new multilevel analysis including four nested models was run. The results are represented in Table 7. The empty model and the model with randomly varying intercepts remained the same as the models testing for the direct effect of the intervention on the guiding managerial coaching behaviour.

The second model (M2) included the control variables of the manager and the subordinates in the model. The highest education level the manager had achieved had a positive effect on the guiding coaching behaviour as perceived by the subordinate ($B = .123$, $p > .01$). Therefore, the higher educated the manager, the more the subordinates perceived the manager as coaching through guiding behaviours. Manager's age had a negative effect on the manager's guiding coaching behaviour from the perspective of the subordinate ($B = -.173$, $p > .001$). So the older the manager, the less subordinates perceived the manager as coaching by guiding behaviour. The variance resided in the manager dropped till 17.73%. The remained unexplained variance was significant on the level of subordinates and on the level of the manager. According to the Chi-square test, the more complex model significantly predicted guidance behaviour better than the empty model ($\chi^2 = 459.04$; $df = 3$; $p < .001$).

Table 6

Predicting guiding MCB as perceived by the subordinate (level-1) by the online coaching intervention (level-2)

Variable	Guidance			
	M0	M1 B (SE)	M2 B (SE)	M3 B (SE)
<i>Individual level</i>				
Intercept		3.524 (.032)	3.626 (.096)	3.616 (.110)
Gender ¹			0.036 (.039)	0.036 (.039)
Education			0.026 (.021)	0.026 (.021)
Age			-0.039 (.020)	-0.039 (.020)
<i>Work-unit level</i>				
Time				0.024 (.060)
Intervention				0.011 (.074)
Effect				-0.027 (.074)
<i>Variance components</i>				
Individual level (σ^2)	.408 (.016)***	.408 (0.016)***	.394 (0.016)***	.394 (0.016)***
Manager level (τ^2)	.126 (.020)***	.125 (0.020)***	.121 (0.019)***	.120 (0.019)***
Intra-class Coefficient	23.60%	23.45%	23.45%	23.35%
<i>Model fit</i>				
-2 log likelihood	3184.578	3179.547	2926.813	2926.650
Parameters	3	3	6	9
Change in -2LL/(df)			257.765 (3)***	0.163 (3)

Note: ¹Dummy variable with female as reference group. Intervention= 1= experimental group and 0= control group. Age= in decennia's. B is the unstandardized parameter estimate. SE is the standard error. *p < .05, ** p < .01; ***p < .001

Table 7

Predicting guiding MCB as perceived by the subordinate (level-1) by the IPT and the effect of the online coaching intervention (level-2)

Variable	Guidance				
	M0	M1 B (SE)	M2 B (SE)	M3 B (SE)	M4 B (SE)
<i>Individual level</i>					
Intercept		3.524 (.032)	4.119 (.195)	4.340 (.225)	4.364 (.232)
Gender ^{1 2}			.059 (.040)	.055 (.041)	.054 (.041)
Education ²			.018 (.021)	.014 (.041)	.014 (.022)
Age ²			-.024 (.021)	-.026 (.021)	-.027 (.021)
<i>Work-unit level</i>					
Gender ³			-.012 (.061)	-.034 (.060)	.037 (.060)
Education ³			.123 (.037)**	.128 (.037)**	.126 (.037)**
Age ³			-.173 (.038)***	-.179 (.037)***	-.181 (.037)***
IPT				-.045 (.0331)	-.042 (.031)
Time					.030 (.063)
Intervention					-.036 (.070)
Effect (Time*Intervention)					-.014 (.080)
<i>Variance components</i>					
Individual level (σ^2)	.408 (.016)***	.408 (0.016)***	.399 (.016)***	.400 (.017)***	.400 (.017)***
Manager level (τ^2)	.126 (.020)***	.125 (0.020)***	.086 (.016)***	.078 (.016)***	.077 (.016)***
Intra-class Coefficient	23.60%	23.45%	17.73%	16.32%	16.14%
<i>Model fit</i>					
-2 log likelihood	3184.578	3179.547	2720.507	2610.225	2609.436
Parameters	3	3	9	10	13
Change in -2LL/(df)			459.04 (3)***	110.282 (1)***	.789 (3)

Note: ¹Dummy variable with female as reference group. ²Individual level measure ³ Manager level measure. Intervention= 1= experimental group and 0= control group. Age= in decennia's. B is the unstandardized parameter estimate. SE is the standard error. *p < .05, ** p < .01; ***p < .001

The third model (M3) included manager's IPT as predictor of guiding coaching behaviour. The effects of managers' education ($B=.128, p>.01$) and age ($B=-.179, p>.001$) on guiding MCB remained significant. The IPT did not significantly predict the guiding coaching behaviour of the manager according to the subordinate. Therefore, hypothesis 3A was rejected. The inclusion of the IPT explained that a part of the variance resided in the level of the manager since the percentage dropped (17.73- 16.32) 1.41%. The Chi-square test showed a significant improvement of the model-fit compared to the second model ($\chi^2 = 110.282$; $df = 1$; $p < .001$).

The fourth model (M4) included the effect of the intervention. No significant effect was found over time, of the experimental condition or the effect of the intervention. Neither showed the Chi-square test a significant improved fit of this more complex model compared to the third model.

Predicting manager's facilitating coaching behaviour as perceived by the subordinate

Three nested models were run to test the direct effect of the online coaching intervention on the facilitating coaching behaviour of the manager as perceived by the subordinates. A positive and direct effect was hypothesized in hypothesis 1B. Table 8 presents the results of the three models. The first model (M1) showed a significant unexplained variance on the level of the subordinate ($\sigma^2 = 0.454$; $p < .001$) and on the level of the managers ($\tau^2 = 0.089$; $p < .001$). 16.39% of the variance of manager's facilitating coaching behaviour is explained by the different groups of subordinates.

To this empty model, control variables on the level of the subordinate were included (M2). None of the control variables had a significant effect on the facilitating coaching behaviours of the manager as perceived by the subordinate. The inclusion of the model predicted the facilitating coaching behaviour significantly better than the empty model ($\chi^2 = 245.384$; $df = 3$; $p < .001$).

After controlling for subordinates' gender, education and age, the time, intervention and the effect of the intervention over time was included in the model (M3). There was no significant effect of the online coaching intervention on the facilitating coaching behaviour of the manager from the subordinates' perspective. Neither did this more complex model improve the fit compared to the second model with control variables and thus hypothesis 1B was not confirmed.

To test whether the manager's IPT significantly predicted manager's facilitating coaching behaviour according to the subordinates; a new multilevel analysis including four nested models was run (Table 9). These models tested the direct effect of manager's IPT on manager's facilitating coaching behaviour, and, subsequently, the predicting effect of the online intervention for manager's IPT and manager's facilitating coaching behaviour. The empty model (M1) was the same as the empty model testing the direct effect. The second model (M2) included the control variables of the subordinates and the control variables on the level of the manager. Managers' education had a positive significant effect on the facilitating coaching behaviour as perceived by the subordinate ($B = .078, p > .05$), which means that the higher educated the manager, the more the subordinates perceived the manager as coaching by facilitating the subordinate. Manager's age had a negative effect on the perceived facilitating coaching behaviour as perceived by the subordinates ($B = -.073, p > .05$). Therefore, the older the manager, the less subordinates perceived the manager as providing coaching by facilitating behaviour. This more complex model explained the data significantly better than the empty model ($\chi^2 = 435.962; df = 6; p < .001$). But there was still a significant unexplained variance on the level of the subordinates as on the level of the manager.

Table 8
Predicting facilitating MCB as perceived by the subordinate (level-1) by the online coaching intervention (level-2)

Variable	Facilitation			
	M0	M1	M2	M3
		B (SE)	B (SE)	B (SE)
<i>Individual level</i>				
Intercept		3.686 (.029)	3.868 (.099)	3.818 (.112)
Gender ¹			-.012 (.040)	-.009 (.040)
Education			.001 (.021)	.001 (.021)
Age			-.039 (.021)	-.039 (.021)
Time				-.025 (.063)
Intervention				.074 (.071)
Effect (Time*Intervention)				.021 (.078)
<i>Variance components</i>				
Individual level (σ^2)	.454 (.017)***	.454 (.017)***	.446 (.018)***	.444 (.018)***
Manager level (τ^2)	.090 (.016)***	.089 (.016)***	.088 (.016)***	.089 (.016)***
Intra-class Coefficient	16.54%	16.39%	16.48%	16.70%
<i>Model fit</i>				
-2 log likelihood	3299.684	3294.477	3054.300	3052.382
Parameters	3	3	6	9
Change in -2LL/(df)			245.384 (3)***	1.918 (3)

Note: ¹Dummy variable with female as reference group. Intervention= 1= experimental group and 0= control group. Age= in decennia's. B is the unstandardized parameter estimate. SE is the standard error. *p < .05, ** p < .01; ***p < .001

Table 9
Predicting facilitating MCB as perceived by the subordinate (level-1) by the IPT and the effect of the online coaching intervention (level-2)

Variable	Facilitation				
	M0	M1 B (SE)	M2 B (SE)	M3 B (SE)	M4 B (SE)
<i>Individual level</i>					
Intercept		3.686 (.029)	4.034 (.189)	4.124 (.218)	4.11 (.225)
Gender ^{1 2}			.006 (.042)	-.001 (.043)	-.001 (.043)
Education ²			-.007 (.022)	-.006 (.022)	-.006 (.022)
Age ²			-.030 (.022)	-.033 (.022)	-.033 (.022)
<i>Work-unit level</i>					
Gender ³			-.016 (.058)	-.037 (.035)	-.034 (.058)
Education ³			.078 (.035)*	.085 (.035)*	.087 (.035)*
Age ³			-.073 (.036)*	-.084 (.036)*	-.083 (.035)*
IPT				-.008 (.030)	-.008 (.030)
Time					-.036 (.067)
Intervention					.009 (.068)
Effect (Time*Intervention)					.043 (.085)
<i>Variance components</i>					
Individual level (σ^2)	.454 (.017)***	.454 (.017)***	.454 (.019)***	.455 (.019)***	.455 (.019)***
Manager level (τ^2)	.090 (.016)***	.089 (.016)***	.066 (.014)***	.057 (.014)***	.057 (.014)***
Intra-class Coefficient	16.54%	16.39%	12.69%	11.13%	11.13%
<i>Model fit</i>					
-2 log likelihood	3299.684	3294.477	2858.515	2739.639	2739.152
Parameters	3	3	9	10	13
Change in -2LL/(df)			435.962 (6)***	118.876 (1)***	.0487 (3)

Note: ¹Dummy variable with female as reference group. ²Individual level measure ³Manager level measure. Intervention= 1= experimental group and 0= control group. Age= in decennia's. B is the unstandardized parameter estimate. SE is the standard error. *p < .05, ** p < .01; ***p < .001

The third model (M3) included manager's IPT as a predictor of manager's facilitating coaching behaviour. Like previous models, the manager's education had a positive effect on manager's facilitating coaching behaviour ($B=.085, p>.05$) and the manager's age a negative effect ($B=-.085, p>.05$). The manager's IPT did not significantly predict the facilitating coaching behaviour according to the subordinates. Therefore, hypothesis 3B was rejected. The unexplained variance resided in manager level dropped with (12.69-11.13) 1.56%. A significant unexplained variance still remained on the level-1 and level-2. This third model, which included one additional level-2 predictor fit the data significantly better than the second model ($\chi^2 = 118.876; df = 1; p < .001$).

Lastly, the fourth model (M4) included the effect of the intervention. No significant effects were found for the intervention, and the Chi-square test did not show an improvement of the model fit.

Predicting manager's inspiring coaching behaviour as perceived by the subordinates

To test hypothesis 1C regarding the direct effect of the online coaching intervention on the inspiring coaching behaviour, three nested models were run. The results of the multilevel analysis can be found in Table 10. It was hypothesized that online coaching would positively affect managers' inspiring coaching behaviour as perceived by the subordinates. The empty model (M1) showed that there was unexplained variance on the level of subordinates ($\sigma^2 = 0.480; p < .001$) and on the level of the managers ($\tau^2 = 0.108; p < .001$). 18.37% of manager's inspiring coaching behaviour variance exists within the second level and is explained by differences between the groups of the subordinates.

The second model (M2) included the control variables on the subordinates' level as covariates. Subordinate's age had a significant negative effect ($B = -.097; p < .001$) on the inspiring coaching behaviour of the manager. This indicates that the older the subordinates, the less inspiring the subordinates perceived their manager. The model including the control

variables (M2) predicted the inspiring behaviour of the manager significantly better than the empty model (M1) ($\chi^2 = 272.128$; $df = 3$; $p < .001$).

The third model (M3) included the effect of the online coaching intervention. No significant effect of time, intervention, or effect of the interaction was found. Neither was there an improvement in the explanation of the previous model (M2) ($\chi^2 = 1.104$; $df = 3$; $p > .05$). Therefore, hypothesis 1C was rejected. The effect of subordinate's age on the inspiring coaching behaviour as perceived by the subordinate remained significant after inclusion of the effect of the intervention ($B = -.097$; $p < .001$).

To test hypothesis 3C, the effect of the manager's IPT on the inspiring coaching behaviour, as perceived by the subordinates, a multilevel analysis with four nested models was run. The results can be found in Table 11. The results of the null model and the empty model (M1) are the same as for previous null and empty model (M1) run to test the direct effect of the online coaching intervention on manager's inspiring managerial coaching behaviour. The second model (M2) included the control variables on the level of the manager and on the level of the subordinates. The age of the subordinates ($B = -.088$, $p > .001$) and the age of the manager ($B = -.110$, $p > .01$) was negative related to the extent of inspiration coaching behaviour the subordinates perceived by their managers. Thus, the older the subordinate and/or the older the manager, the less the subordinates perceived the manager's coaching behaviour as inspirational. The highest achieved education level of the manager had a positive relation with the inspiring coaching behaviour as perceived by the subordinates ($B = .082$, $p > .01$). Thus, the higher educated the manager, the more inspiring he/she is perceived as when providing coaching behaviour. The Chi-square test shows that this more complex model (M2) predicts the inspiring coaching behaviour significantly better compared to the empty model (M1) ($\chi^2 = 398.485$; $df = 3$; $p < .001$).

Table 10
Predicting inspiring MCB as perceived by the subordinate (level-1) by the online coaching intervention (level-2)

Variable	Inspiration			
	M0	M1 B (SE)	M2 B (SE)	M3 B (SE)
<i>Individual level</i>				
Intercept		3.808 (.032)	4.192 (.102)	4.180 (.115)
Gender ¹			-.010 (.041)	-.009 (.041)
Education			.023 (.022)	.023 (.022)
Age			-.097 (.021)***	-.097 (.021)***
Time				-.040 (.063)
Intervention				.035 (.074)
Effect (Time*Intervention)				.011 (.080)
<i>Variance components</i>				
Individual level (σ^2)	.481 (.018)***	.480 (.018)***	.466 (.019)***	.465 (.018)***
Manager level (τ^2)	.109 (0.018)***	.108 (.018)***	.102 (.018)***	.104 (.018)***
Intra-class Coefficient	18.47%	18.37%	17.96%	18.28%
<i>Model fit</i>				
-2 log likelihood	3400.112	3395.045	3127.984	3126.880
Parameters	3	3	6	9
Change in -2LL/(df)			272.128 (3)***	1.104 (3)

Note: ¹Dummy variable with female as reference group. Intervention= 1= experimental group and 0= control group. Age= in decennia's. B is the unstandardized parameter estimate. SE is the standard error. *p < .05, ** p < .01; ***p < .001

Table 11
Predicting inspiring MCB as perceived by the subordinate (level-1) by the IPT and the effect of the online coaching intervention (level-2)

Variable	Inspiration				
	M0	M1 B (SE)	M2 B (SE)	M3 B (SE)	M4 B (SE)
<i>Individual level</i>					
Intercept		3.686 (.029)	4.521 (.196)	4.733 (.229)	4.769 (.236)
Gender ^{1 2}			.003 (.043)	-.006 (.044)	-.006 (.044)
Education ²			.012 (.022)	.006 (.023)	.005 (.023)
Age ²			-.088 (.022)***	-.085 (.023)***	-.085 (.023)***
<i>Work-unit level</i>					
Gender ³			.006 (.061)	-.020 (.061)	-.021 (.061)
Education ³			.082 (.037)**	.085 (.037)**	.083 (.037)**
Age ³			-.110 (.038) **	-.118 (.038)**	-.118 (.038)**
IPT				-.041 (.031)	-.041 (.032)
Time					-.013 (.067)
Intervention					-.035 (.072)
Effect (Time*Intervention)					-.007 (.086)
<i>Variance components</i>					
Individual level (σ^2)	.454 (.017)***	.454 (.017)***	.464 (.019)***	.464 (.020)	.465 (.020)***
Manager level (τ^2)	.090 (.016)***	.089 (.016)***	.076 (.015)***	.070 (.015)	.069 (.015)***
Intra-class Coefficient	16.54%	16.39%	14.07%	13.11%	12.92%
<i>Model fit</i>					
-2 log likelihood	3299.684	3294.477	2895.992	2779.487	2778.992
Parameters	3	3	9	10	13
Change in -2LL/(df)			398.485 (3)***	116.505 (1)***	.495 (2)

Note: ¹Dummy variable with female as reference group. ²Individual level measure ³ Manager level measure. Intervention= 1= experimental group and 0= control group. Age= in decennia's. B is the unstandardized parameter estimate. SE is the standard error. *p < .05, ** p < .01; ***p < .001

The third model (M3) included manager's IPT in the model to predict the inspirational coaching behaviour of the managers as perceived by the subordinates. The IPT did not significantly predict the inspiring managerial coaching behaviour; therefore, hypothesis 3C was not confirmed. However, managers' education level ($B=.085, p>.01$) and subordinates' age ($B=-.085, p>.001$) and managers' age ($B=-.118, p>.01$) were still related to the inspiring coaching behaviour. The inclusion of the IPT predicts the model significantly better compared to the second model ($\chi^2 = 116.505; df = 1; p < .001$). The unexplained variance on the level of the manager also dropped by the inclusion of the manager's IPT compared to the model including only the control variables (M2).

Lastly, the fourth model (M4) included the effect of time, the intervention and the intervention over time. When run, there was no effect of the intervention or of the IPT after the intervention. The effects of managers and control variables remained the same as compared to previous models, and this more complex model did not improve the fit of the data tested with the Chi-square test.

Predicting managers' implicit person theory

Hypothesis 2 tested the direct effect of the intervention on manager's implicit person theory. Three nested models were run and the results are represented in Table 12. The first, random coefficient, model (M1) showed that there was a significant unexplained variance at the individual level ($\sigma^2 = 0.102; p < .001$) and on the managers' level ($\tau^2 = 0.683; p < .001$). The unexplained variance on the level of the manager is relatively higher as the unexplained variance on the subordinates' level what could be explained by the fact that the dependent variable IPT is measured on the second level. The unexplained variance resided in the group level was 12.99%.

Table 12

Predicting manager's IPT (level-2) by the online coaching intervention (level-2)

Variable	Manager's IPT			
	M0	M1 B (SE)	M2 B (SE)	M3 B (SE)
<i>Individual level</i>				
Intercept		3.702 (.063)	3.563 (.372)	3.505
Gender ¹			-.075 (.125)	-.070 (.125)
Education			-.173 (.078)*	-.172 (.078)*
Age			.011 (.077)	.116 (.077)
<i>Work-unit level</i>				
Time				-.038 (.030)
Intervention				.084 (.122)
Effect				-.053 (.038)
<i>Variance components</i>				
Individual level (σ^2)	.102 (.004)***	.102 (.004)***	.103 (.004)***	.102 (.004)***
Manager level (τ^2)	.687 (.076)***	.683 (.085)***	.653 (.072)***	.643 (.072)***
Intra-class Coefficient	12.93%	12.99%	13.62%	13.69%
<i>Model fit</i>				
-2 log likelihood	1509.850	1506.168	1493.322	1477.286
Parameters	3	3	6	9
Change in -2LL/(df)			12.846 (3)**	16.036 (3)**

Note: ¹Dummy variable with female as reference group. Intervention= 1= experimental group and 0= control group. Age= in decennia's. B is the unstandardized parameter estimate. SE is the standard error. *p < .05, ** p < .01; ***p < .001

The second mode (M2) added the control variables at the level of the manager. The education level of the manager is negatively correlated to the manager's IPT (B = -.173; $p < .05$). This suggests that the higher the manager is educated, the more fixed the mind-set of the manager. As a result of the Chi-square test this second model fit the data significantly better than the empty model ($\chi^2 = 12.846$; $df = 3$; $p < .01$).

To test the direct effect of the online coaching, time, intervention and the effect of the intervention over time were included in the third model. The third model (M3) did not show significant effects of the intervention on manager's IPT. Therefore, hypothesis 2 was rejected. The Chi-square test showed that the inclusion of the IPT improved the model-fit when compared to the second model, and therefore, this more complex model predicts manager's IPT significantly better ($\chi^2 = 16.036$; $df = 3$; $p < .01$).

The effect of online coaching on manager's coaching behaviour as perceived by the subordinate, mediated by manager's implicit person theory

Three hypotheses were formed to test the mediation effect of manager's IPT. Prior to using Sobel tests (Sobel, 1982), the guidelines of MacKinnon, Fairchild, and Fritz (2007) were consulted. MacKinnon et al. (2007) stated that mediation can only occur provided that the independent variable is significantly related to the mediator and the mediator needed to be significant related to the dependent variable, controlled for the effect of the independent variable (MacKinnon et al., 2007). There was no direct effect of the online coaching intervention on manager's IPT, or an effect of manager's IPT on a dimension of manager's coaching behaviour as perceived by the subordinates controlled for the online coaching intervention, so, all three mediating hypothesis were rejected.

Discussion and Conclusion

The purpose of the study was to test and extend current knowledge regarding the relationship between an online coaching intervention for managers and their guiding, facilitating and inspiring MCB. Towards this end, the central question addressed in this study is: *Does supporting a manager through online coaching affect a manager's guiding, facilitating and inspiring coaching behaviour from the perspective of the subordinates, and to what extent is this relationship mediated by a manager's implicit person theory?*

Based on previous studies and literature, it was hypothesised that coaching a manager online would positively affect a manager's facilitating, guiding and inspiring coaching behaviour. It was also assumed that coaching the manager online would enhance manager's belief in the incremental person theory. These assumptions were tested in a quasi-experimental study design that used an experimental and control group. The data was analysed by multilevel analyses, and the results indicated that the online coaching intervention had, in contrast to the assumptions, no effect on the guiding, facilitating or inspiring MCB. The analysis could neither reveal a change in a manager's IPT after completing the intervention. In this study, the manager's IPT was not able to predict guiding, facilitating or inspiring MCB according to their subordinates. As a result, the ten hypotheses were not confirmed, and this study did not find the online coaching intervention of managers to be effective in changing manager's IPT or guiding, facilitating or inspiring MCB.

The direct effect of the online coaching intervention on facilitating, guiding and inspiring MCB

The first three hypotheses assumed that supporting managers through online coaching would have a positive effect on guiding, facilitating and inspiring MCB as perceived by a manager's subordinates. These hypotheses were based on the assumption that positive experiences of mastery would give the manager confidence to experiment with new behaviours in their own coaching (Bandura, 1977). An important part of a manager's behaviour is to support subordinates in improving their performance, and towards this end, the manager is likely to perform MCB (Evered & Selman, 1989; Hamlin, Ellinger, & Beattie, 2006; Longenecker & Neubert, 2005). In contrast to the expectations, the study found no relationship between the online coaching intervention and a manager's guiding, facilitating and inspiring coaching behaviour as perceived by the subordinates.

The absence of a correlation between the online coaching intervention and the dimensions of MCB can be explained by the fact that the existing relationship between the manager and subordinates influences whether the manager perceives MCB as an effective approach to improve a subordinate's performance (Ellinger, Ellinger, Bachrach, Wang, & Baş, 2011; Ellinger, Baş, & Ellinger, 2007). For example, it is assumed that for relatively small group sizes it is easier for managers to have quality time and personal communication with subordinates in their daily communication. When subordinates are then coached by their manager on top of their relatively frequent qualitative contact with their manager, one-on-one coaching is less likely to have a positive effect, and it might even have counterproductive effects. The managers of this study indicated that they had, on average, 12 subordinates (Table 1), and the subordinates that filled in the questionnaire had 13 co-workers on average (Table 2). For teams with 12 or 13 subordinates, a manager is likely to have frequent personal communication. Therefore, it could be argued that the managers of this study perceived MCB as a less effective approach to improve subordinates' performance compared to other managerial behaviours.

Alternatively, it is possible that there is no correlation found between MCB and the online coaching intervention because of specific organizational circumstances that ask for other managerial behaviours than guiding, facilitating and inspiring MCB.

For example, during an economic crisis it is likely that there is a pressure to improve the 'hard' business results in order to survive. It could be that MCB does not pay off in improved measurable business results fast enough compared to alternative managerial behaviour. Moreover, during an economic crisis it could be that MCB is avoided by the managers because MCB first increases the business costs and subordinates' and manager's work-pressure before it benefits the performance. Concluding that the economic crisis that

was going on during the intervention could explain why in this study the online coaching intervention did not predict MCB.

Besides, reorganization may increase the risk that the manager-subordinate relationship is interrupted and thus causes insecurity within working relations. Providing guiding, facilitating and inspiring MCB requires a long-term perspective of the manager, so during reorganization MCB might not be perceived by the manager as the most appropriate managerial approach. At the time of the intervention the bank was reorganizing and this might explain why this study did not found significant effects of the online coaching intervention on the MCB.

In order to understand when online coaching interventions for managers positively affect MCB as perceived by the subordinates, it is necessary to further examine the effects of the organizational circumstances for effective guiding, facilitating and inspiring MCB. Moreover, for further research, it is necessary to study the relationship between the manager and subordinates in terms of how personal and frequent the communication should be and how this could be related to the effectiveness of MCB.

The effect of the online coaching intervention on manager's IPT

The second hypothesis predicted a positive effect of the online coaching intervention on the manager's IPT. This assumption was built on the expectation that a manager's experiences with personal development would convince the manager that their subordinates are also capable of developing their attributes. The multilevel analysis showed no significant predicting effect of the online coaching intervention for managers on the managers' IPT. So, therefore, the second hypothesis was not accepted.

Two scenarios should be considered when understanding these outcomes. In the first scenario, the online coaching intervention for managers in this study may not have been

successful. The reorganization within the bank, which took place simultaneously with the intervention, may have disturbed the manager's process of behavioural change. Therefore, it is likely that the managers did not experience development, which gave them no reason to believe that their subordinates could develop either.

In the second alternative scenario, the online coaching of the manager may have resulted in the successful development of the manager. The non-significant findings are then due to the online coaching being too "soft" to change a manager's mind-set. Because the mind-set is relative stable, (Dweck, 2006) previous studies made explicit use of self-persuasion (Heslin et al., 2006) or persuasive formulations in questions (Visser, 2013) in order to change a person's mind-set. Without these techniques, the link between the online coaching intervention for managers and the manager's mind-set might be less clear compared to the previous interventions. Thus, for this study, it is unknown whether the online coaching of managers results in a manager's development, yet it is clear that the online coaching intervention was not able to change the manager's mind-set within 14 weeks. Future research could examine whether online coaching of managers can predict MCB on a longer term.

The direct effect of manager's IPT on facilitating, guiding and inspiring MCB

Three hypotheses were formulated regarding the assumed positive effect of a manager's IPT on a manager's facilitating, guiding and inspiring coaching behaviour, as perceived by the subordinates. The positive effect was supported by the developmental approach of Dweck and Leggett (1988), in which they reasoned that an incremental theorist perceives their environment as controllable and, therefore, as developmental. Based on this approach, of Dweck and Leggett (1988) it is likely that a manager with a growth mind-set aims to develop subordinates and behaves towards this end. Contrary to this expectation, the multilevel analyses showed a non-significant relationship between a manager's IPT and their MCB, so the three hypotheses were not confirmed.

It can be argued that a manager tends to express an incremental belief by managerial behaviours other than MCB. Since providing coaching to subordinates is a tailored practice, it is plausible that the additional training costs could prohibit the use of coaching except for underperformance or when regular developmental instruments are insufficient. In that case, coaching is more like a “cure for an illness” or an “exceptional practice.” In that case, a manager is less likely to provide MCB to express his or her belief in the subordinates’ capability to develop, and thus other managerial behaviours may seem more appropriate. To understand whether MCB is a suitable instrument for a manager to express confidence in subordinate’s development, tests should have been performed to determine the managers’ and subordinates’ definitions of MCB. Although there was a consistent interpretation of MCB in this study ($\alpha = .935$), it is unclear how managers and subordinates perceived MCB. In order to understand whether MCB has a negative or positive meaning for managers and subordinates, additional questions should be constructed. So far, the negative effects of MCB in organizations are less studied than the positive effects. There is a need for more research to understand if MCB is, at times, less appropriate compared to other managerial behaviours and why that might be.

The indirect effect of the online coaching intervention on facilitating, guiding and inspiring MCB, mediated by manager’s IPT

The last three hypotheses included the mediation effect of manager’s IPT within the relation of the online coaching intervention for managers and their facilitating, guiding and inspiring coaching behaviour, as perceived by their subordinates. It was assumed that the online coaching intervention would lead to an increased belief in the incremental person theory of the manager; this was expected to positively affect manager’s facilitating, guiding and inspiring coaching behaviours. The assumptions were not supported by the multilevel analyses and the three hypotheses were not proven.

In sum, the non-significant results suggest that (1) the online coaching intervention for managers might be too “soft” to pursue a belief in the incremental person theory within the manager’s mind-set and (2) MCB is not always an appropriate instrument for managers to express their belief in their subordinates’ capability for development. Moreover (3), the non-significant results contribute to the previous studies that have tried to understand whether MCB *always* improves performance or whether there are situations when MCB should be avoided (Ellinger et al., 2011; A. E. Ellinger et al., 2007).

The control variables and managerial coaching behaviour

Although it was not the main interest of the study, some interesting relations were found between the control variables and the dependent variables. The unexpected effect of the manager’s age and the highest education level the manager achieved on the perceived managerial coaching behaviour was found for all three dimensions of MCB, which suggests a substantial effect. While there was no relation postulated, the multilevel analyses revealed that the highest education level of the manager also had a significant effect on manager’s IPT, and the age of the subordinate was negatively related to their perceived level of a manager’s inspiring coaching behaviours.

The study showed that the respondent’s age was related to MCB in such a way that (1) older managers are perceived as providing less facilitating, guiding and inspiring MCB according to their subordinates and (2) older subordinates perceived the managers as providing less inspiring MCB. This may be because older employees attach less importance to developmental practices since they are not as interested in work-related growth as the younger employees (Kooij et al., 2013). Older managers, therefore, are less likely to provide developmental-orientated behaviour, and older subordinates are assumed to request less developmental support. In particular, inspiring older subordinates is difficult because they are

more experienced. Further research is needed to understand the effects different for the subscales of MCB.

The study also showed that the manager's highest achieved education level had a significant effect on the variables of interest. A manager's education level showed a significant negative effect on the manager's IPT and a positive significant effect on all dimensions of MCB. This indicates that (1) higher educated managers have a more fixed mind-set and that (2) subordinates perceive higher educated managers as providing more MCB. This is the opposite of what was postulated, because a fixed mind-set was hypothesized to lead to less MCB.

To understand this unexpected outcome, it is important to notice that managers, in this study, have a higher level of achieved education than their subordinates (Table 2 and 3). Therefore, it can be concluded that, in this study, the relatively higher educated employees are positioned in the manager functions and the relatively lower educated employees have the role of the subordinates. Within the manager-subordinate relationship, it is the manager's role to support the subordinates in development to ensure that a subordinate's performance improves or at least remains stable. In some work situations, subordinates underperform and show insufficient development, or it takes considerable managerial effort to keep the subordinate on track. These previous negative experiences can establish a belief within the manager that it is hard, or almost impossible, for someone to change his or her personal attributes. This explanation is a suggestion, but it does not exclude other possible explanations to understand why the manager's education level was negatively related to their IPT in this study.

The positive relationship between the highest level of education obtained by the manager and the guiding, facilitating and inspiring MCB, as perceived by their subordinates, can be explained by the assumption that subordinates perceive higher educated managers as

performing better compared to less educated managers. Thus, the subordinates are also likely to attribute more MCB to a higher educated manager than a lower educated manager.

Overall, this study provided evidence that the effects of age and highest achieved education level were underestimated. It is advised for future studies to examine the influence(s) of a manager's highest attained education level on the manager's IPT and MCB and to study the influence(s) of managers' and subordinates' age on the different dimensions of MCB as perceived by subordinates.

Limitations

The results of this study are limited because of the (1) IPT measurement, (2) the sampling method and (3) the experimental conditions. First, the original IPT measurement of Chiu et al. (1997) was written in English and translated by the researchers without pre-testing the measurement on its reliability and factor structure. In the study, the items did not show one reliable scale because, according to Pallant (2010), a Cronbach's alpha of less than .7 is too low. In order to improve the reliability of the IPT scale, four items were deleted. The removal of these items is not recommended because usable data could not be included in the research, and the available data to test manager's IPT was limited.

Second, the organizations were included by methods of convenience. This caused an unequal distribution of employers in which the majority (72.5%) of the employees were employed in the banking industry. The use of non-probability sampling limited the generalizability of the results and it increased the sampling error (Kothari, 2004, p. 58). Besides, the sample had a natural bias since the managers were included by self-selection (Kothari, 2004, p. 57). Therefore, it is likely that the managers had a more open attitude towards coaching and development compared to other managers that had not applied to participate in the study. Since the online coaching intervention for the manager can only succeed when the manager is willing to engage in behavioural change, it can be assumed that,

in this study, the online coaching intervention had an increased possibility of success compared to circumstances where online coaching interventions for managers are implemented in the actual, everyday organization environment. Moreover, the natural bias can have important implications the study results since the manager's belief of personal development (IPT) was tested as the mediator of this study.

Last, because of the economic crisis, the bank was going through reorganization at the same time that the research was applied. Reorganization is likely to increase the workload, and therefore, the managers are less likely to change their behaviour and/or to coach their subordinates. Furthermore, a reorganization and economic crisis causes job insecurity and an unstable, insecure work environment. Behavioural change requires a trusted and stable environment, so under these conditions of insecurity, the manager is less likely to experiment with new behaviours. These and other uncontrollable factors of the organizational circumstances may have affected the success of the online coaching intervention.

Future research and practical implications

Before the study, there were specific, positive expectations for the effect of the online coaching intervention for managers on their IPT and guiding, facilitating and inspiring coaching behaviours as perceived by their subordinates, but the study did not confirm these expectations. Nevertheless, this study's results can hopefully contribute to further investigation of online coaching interventions, IPT and MCB.

For example, the factor analysis of the MCB scale of Heslin, Latham, and VandeWalle (2005) in this study supported the three sub dimensions, and therefore, this study contributed to the validation of the three subscales whereas previous studies mainly tested the MCB instrument as one scale and the literature regarding the effects of manager's guiding, facilitating and inspiring coaching behavior as three different subscales is limited. But, in this study the MCB scale had a relatively high Cronbach's alpha, suggesting that the MCB

instrument of Heslin et al. (2005) is a reliable measurement for further studies to examine the MCB. Based on the PCA and the Cronbach's alpha of this study the MCB instrument of Heslin et al. (2006) seems to be an appropriate instrument for further exploration of guiding, facilitating and inspiring managerial coaching behavior.

In contrast, this study found a low reliability of IPT items of Chiu et al. (1997), which suggests that more research should be performed in order to construct a reliable instrument to measure a manager's IPT.

The results of the multilevel analyses of this study call for further research to understand how group sizes, the manager-subordinate relationship and the manager's and manager's age and education level can predict guiding, facilitating and inspiring MCB as perceived by subordinates. Moreover, more research is also required to understand to what extent a manager's education level can affect the manager's IPT. Likewise, organizations are advised to pre-study the perception of their managers regarding online coaching interventions and the perception of their managers and subordinates regarding the guiding, facilitating and inspiring coaching behaviour of managers before they implement coaching interventions or define how managers can provide coaching for their subordinates. Additionally, organizations are recommended to consider the organization's circumstances to understand whether coaching is appropriate.

While this study did not find the expected effects of the online coaching intervention for the manager on the guiding, facilitating and inspiring coaching behaviour of the manager from the perspective of the subordinates, and no effect was found on the manager's IPT, still this study contributes to the exploration of understanding coaching within organizations. And so, step by step, the effectiveness of coaching can be increasingly predicted and implemented.

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APPENDIX A

Table A1: Results of the factor analysis and Cronbach's alpha of the Managerial Coaching Behaviour scale for managers at t=1

Coaching behaviour items		Guidance	Facilitation	Inspiration
1	Ik... -begeleid hen bij het duidelijk krijgen van de performance verwachtingen	.305	.600	
2	Ik... -help hen hun performance te analyseren		.651	
3	Ik... -geef constructieve feedback op verbeterpunten		.798	
4	Ik... -geef bruikbare suggesties hoe zij hun performance kunnen verbeteren		.800	
5	Ik... -fungeer als klankbord bij het uitwerken van hun ideeën			.724
6	Ik... -stel hen in staat om creatief na te denken over het oplossen van problemen			.704
7	Ik... -moedig hen aan om nieuwe alternatieven te verkennen en uit te proberen	.688		
8	Ik... -spreek vertrouwen uit dat zij zich kunnen ontwikkelen en verbeteren	.854		
9	Ik... -moedig hen aan om zichzelf voortdurend te ontwikkelen en te verbeteren	.785		
10	Ik... -steun hen bij het aangaan van nieuwe uitdagingen	.852		
KMO				.817
Bartlett's sphericity significance				.000
Eigenvalue		3.917	1.382	1.179
Variance explained		39.17	13.817	11.787
Cronbach's alpha				.820

Table A2: Results of the factor analysis and Cronbach's alpha of the Managerial Coaching Behaviour scale for subordinates at t=1

Coaching behaviour items	Guidance	Facilitation	Inspiration
1 Mijn leidinggevende... -begeleidt mij bij het duidelijk krijgen van de performance verwachtingen		-.860	
2 Mijn leidinggevende... -helpt me mijn performance te analyseren		-.997	
3 Mijn leidinggevende... -geeft constructieve feedback op verbeterpunten		-.706	
4 Mijn leidinggevende... -geeft bruikbare suggesties hoe ik mijn performance kan verbeteren		-.818	
5 Mijn leidinggevende... -fungeert als klankbord bij het uitwerken van mijn ideeën			.790
6 Mijn leidinggevende... -stelt me in staat om creatief na te denken over het oplossen van problemen			.900
7 Mijn leidinggevende... -moedigt me aan om nieuwe alternatieven te verkennen en uit te proberen	.335		.627
8 Mijn leidinggevende... -spreekt vertrouwen uit dat ik mij kan ontwikkelen en verbeteren	.883		
9 Mijn leidinggevende... -moedigt me aan om mezelf voortdurend te ontwikkelen en te verbeteren	.942		
10 Mijn leidinggevende... -steunt mij bij het aangaan van nieuwe uitdagingen	.711		
KMO			.927
Bartlett's sphericity significance			.000
Eigenvalue	6.702	.897	.645
Variance explained	67.018	8.967	6.453
Cronbach's alpha			.945

Table A3: Results of the factor analysis and Cronbach's alpha of the IPT scale for managers at t=0

1	Iedereen, wie dan ook, kan zijn wezenlijke karaktereigenschappen in belangrijke mate veranderen.	.720
2	Mensen kunnen in belangrijke mate veranderen wat voor type persoon ze zijn.	.839
3	Wat voor type persoon iemand ook is, hij/zij kan altijd in sterke mate veranderen.	.836
4	Mensen kunnen zelfs hun meest basale eigenschappen veranderen	.725
	KMO	.774
	Bartlett's sphericity significance	.000
	Eigenvalue	2.446
	Variance explained	61.138
	Cronbach's alpha	.784

Table A4: Results of the factor analysis and Cronbach's alpha of the IPT scale for managers at t=1

1	Iedereen, wie dan ook, kan zijn wezenlijke karaktereigenschappen in belangrijke mate veranderen.	.727
2	Mensen kunnen in belangrijke mate veranderen wat voor type persoon ze zijn.	.833
3	Wat voor type persoon iemand ook is, hij/zij kan altijd in sterke mate veranderen.	.808
4	Mensen kunnen zelfs hun meest basale eigenschappen veranderen	.857
	KMO	.759
	Bartlett's sphericity significance	.000
	Eigenvalue	2.610
	Variance explained	65.254
	Cronbach's alpha	.821